

Accepted Manuscript

Nanoporous g-C₃N₄ nanosheets: Facile synthesis and excellent visible-light photocatalytic H₂ evolution performance

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PII: S0925-8388(18)30870-3

DOI: [10.1016/j.jallcom.2018.03.019](https://doi.org/10.1016/j.jallcom.2018.03.019)

Reference: JALCOM 45249

To appear in: *Journal of Alloys and Compounds*

Received Date: 22 December 2017

Revised Date: 26 February 2018

Accepted Date: 2 March 2018

Please cite this article as: Z. Shu, C. Xie, J. Zhou, T. Li, Y. Chen, W. Wang, Y. Tan, Z. Zhao, Nanoporous g-C₃N₄ nanosheets: Facile synthesis and excellent visible-light photocatalytic H₂ evolution performance, *Journal of Alloys and Compounds* (2018), doi: 10.1016/j.jallcom.2018.03.019.

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1 **Nanoporous g-C₃N₄ nanosheets: facile synthesis and excellent**
2 **visible-light photocatalytic H₂ evolution performance**

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13

14 **Abstract**

15 A facile melamine-involved vapor deposition method was proposed and demonstrated
16 to grow graphitic carbon nitride (g-C₃N₄) on natural kaolin clay. Nanoporous g-C₃N₄
17 nanosheets of 5 nm in thickness containing nanopores of 5 ~ 100 nm in diameter were
18 obtained after removing the kaolin. They showed 14 times higher visible-light
19 photocatalytic H₂ evolution efficiency than traditional bulk g-C₃N₄, benefitting from
20 highly increased specific surface area and improved electron transport ability. This
21 vapor deposition strategy can inspire the synthesis of nanoscale g-C₃N₄ with various
22 tailored structures using diverse natural minerals or other cheap templates.

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